Emission Reduction by Energy Efficiency

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Ship & Shore Environmental Inc.

Green Energy Industrial Solutions

Mission Statement

Our company's mission is to provide energy efficient, innovative, quality products and services that help our customers meet the increasing demands of environmental regulation while enhancing productivity, profitability and personal health.

What We Do – Overall

- Providing solutions to Environmental problems:
  - Concept to Design to Permitting to Construction to Installation & Start-up
- Development of **Cost Effective** abatement systems for each unique application
- Energy Recovery
- Energy Systems Project Management
  - Renewable Energy
  - Energy Recovery
  - Emission Reduction (NOx, CO_2)

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Experience & Expertise

- We are **Not Limited To One Technology**
- Innovative, unique, and customized design for clients' needs
- Vast Engineering Expertise & Knowledge in Pollution Abatement & Energy Recovery
- In-House Engineering Staff
  - Several years of Mechanical, Combustion, Industrial Process, Instrumentation, Controls, and Safety Systems Experience
    - Process Engineering
    - Mechanical Engineering
    - Electrical Engineering
    - Structural Engineering
    - Chemical Engineering

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Greenhouse Gas Formation

Results of Combustion Reaction of Nitrogen and Carbon Components

$$CH_4 + 2O_2 \longrightarrow CO_2 + 2H_2O$$

$$N_2 + O_2 \longrightarrow NOx$$

- Fuels contain Hydrocarbon Components
- Nitrogen comes from Combustion Air

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How to Reduce Greenhouse Gas?

- Plant more vegetation
- Stop deforestation
- Reduce Fuel Consumption = Less CO_2 & NOx
  - How to reduce fuel consumption?
    - **Heat Recovery**
      - Boiler Retrofit (increasing efficiency up to 86%)
      - Economizer, Condensing Economizer, Condensing Boiler, Proper Maintenance, etc.
    - **Energy Recovery**
      - Renewable Sources, i.e. Soar, Wind
      - Electrical Efficiency, i.e. Lighting System Retrofit
    - **Replace inefficient equipment** with energy efficient equipment

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Why Reduce Greenhouse Gas?

- **Environmental Issues**
  - Regulations
  - Green Branding
- **Economical Issues**
  - Cost Saving
    - Price of Electrical Power
    - Price of Fuel (Natural Gas)

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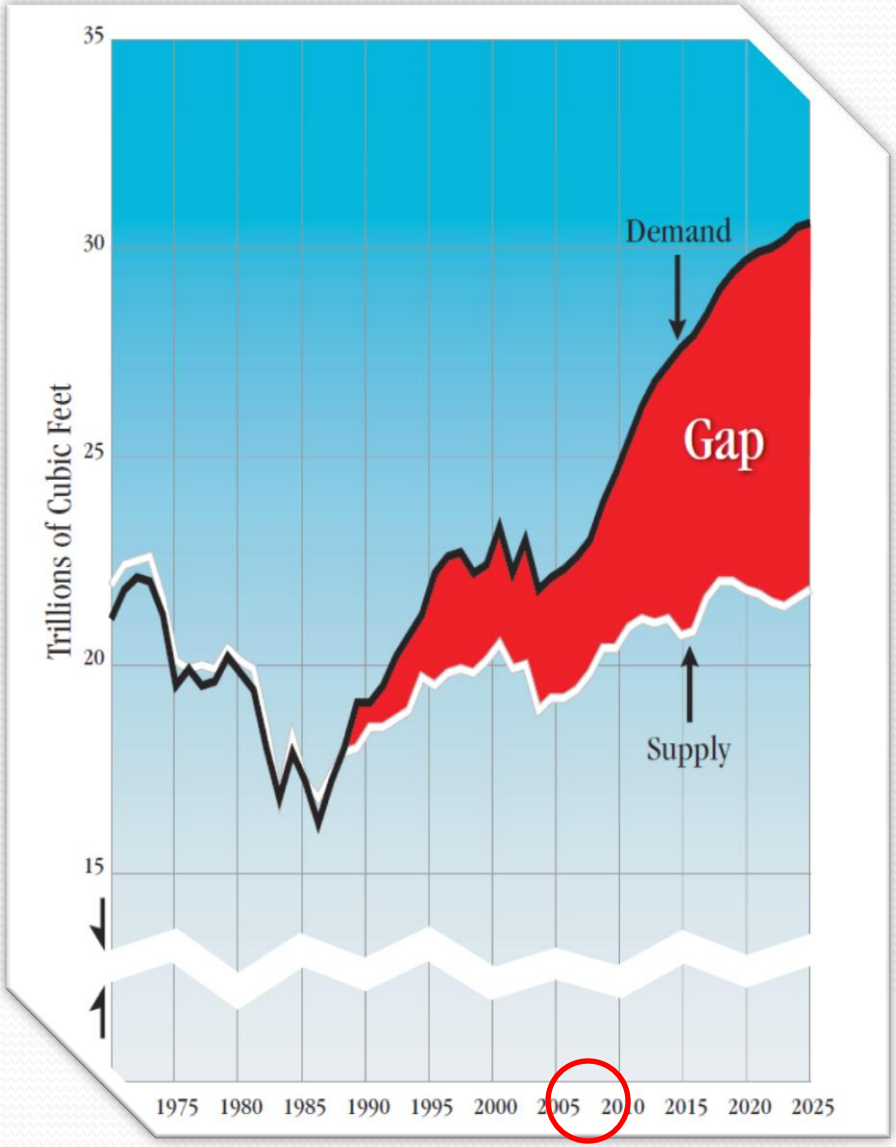
Worsening Gap between Domestic Natural Gas Supply & Demand



Data from Energy Information Administration

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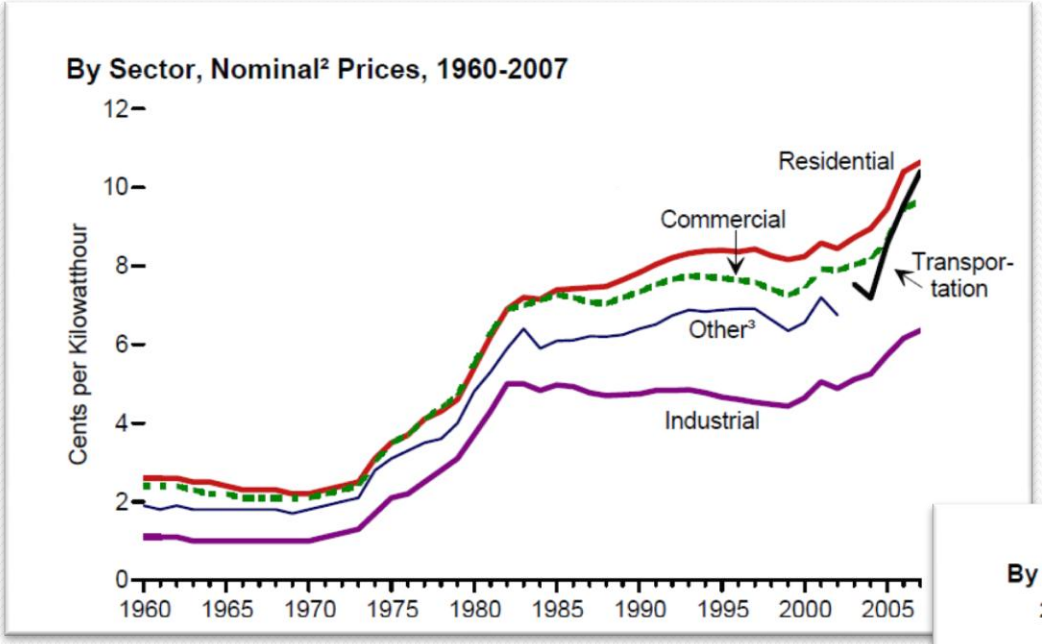
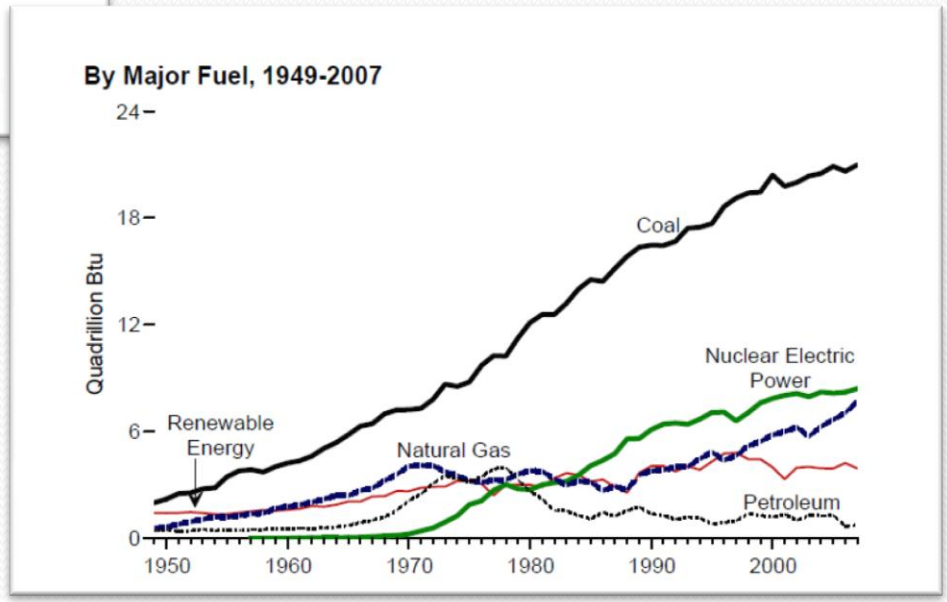
• Average Retail Prices of Electricity*:



3 Public street and highway lighting, interdepartmental sales, other sales to public

• Fuel Categories to Produce Electricity*:



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* Data From Energy Information Administration

What Can Be Done?

- **Going Green Analysis**
  - Thermal Survey
  - Electrical Survey
  - Carbon Footprint Audit
  - Energy Efficiency Calculations
  - Apply for rebates & incentives
- **Energy Recovery**
  - Heat Recovery
  - Lighting Retrofit
  - Electrical Load Distribution
  - Proper Maintenance of Equipment

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Summary

- **Immediate Solutions**
  - Heat Recovery by Condensing Economizer, Condensing Boiler, etc.
  - Lighting Sys. Retrofit (60-70 % consumption reduction)
  - Proper Maintenance
- **Long Term Solutions**
  - Generate your own power (Solar Thermal & Photovoltaic, Wind)
- **Certification**
  - Measurement and verification

Financial Benefits of Early Action

Take Advantage of Available Financial Benefits by Being 1st to Act

- Federal/State Rebates & Incentive Plans
- Tax Credits
- 5-year Accelerated Depreciation (for selected applications)
- ERC (Emission Reduction Credit)
- REC (Renewable Energy Certificate)

Advantages of Early Action

- **Cost Savings**
  - Reduction of Fuel & Power Consumption = $
- **Air Pollution Reduction**
  - Reduction of CO_2 & NOx Emissions = $
- **Financial Benefits**
  - Rebates & Incentives, Tax Credits, ERC & REC Trading = $
- **Marketing Tool - Green Branding**
  - Environmental Conscience Company = $

Q & A

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